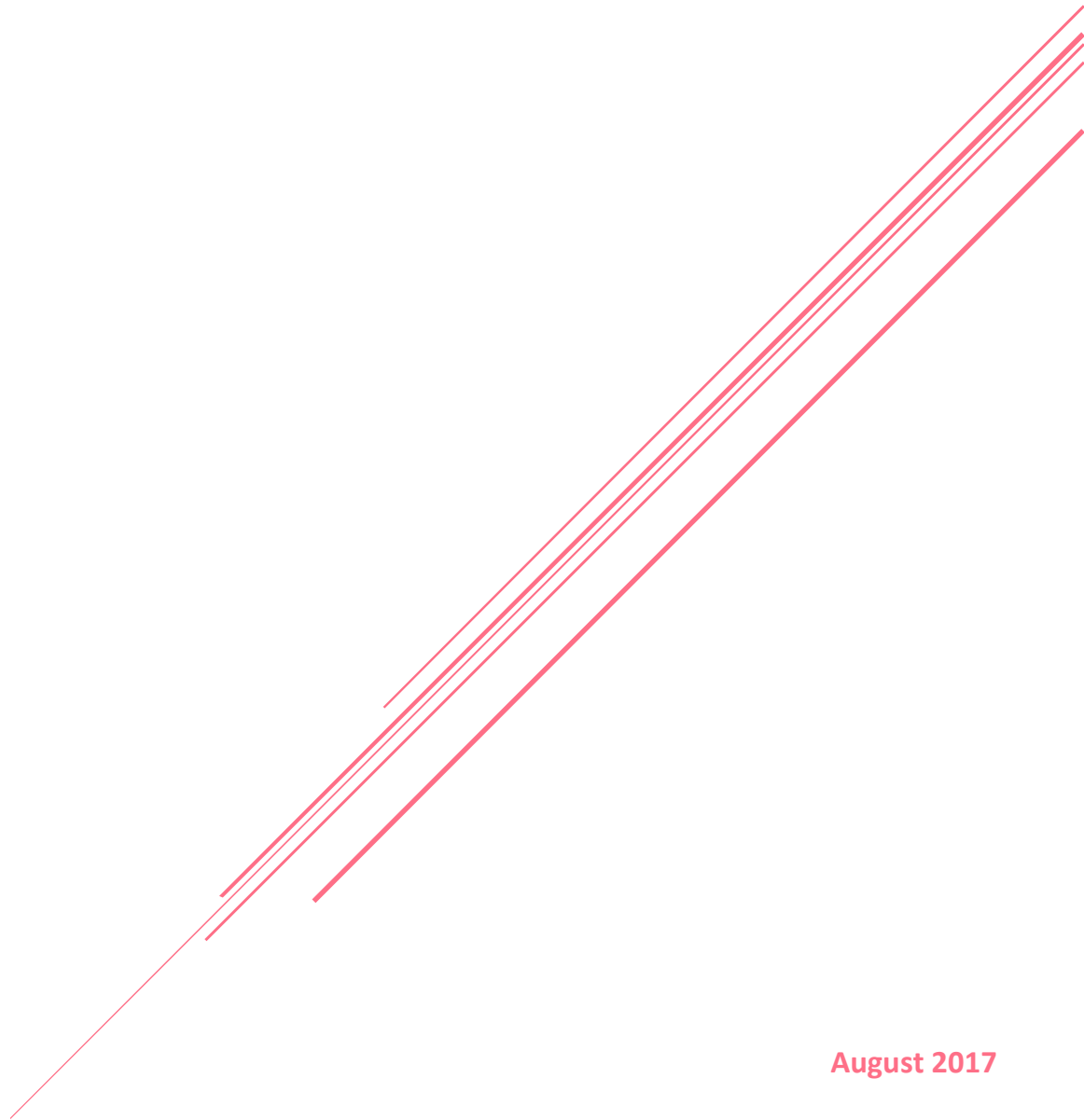


Deworm the World Initiative - Kenya

Process Monitoring and Coverage Validation Report:

A trend analysis of data collected from Year 2 to Year 5 of the NSBDP



August 2017

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Glossary

CHEW. Community health extension worker

CHV. Community health volunteer

ECD. Early childhood development

MDA. Mass drug administration

MOE. Ministry of Education

MOH. Ministry of Health

NSBDP. National School-based Deworming Programme

SAE. Severe adverse events

SCH. Schistosomiasis

STH. Soil-transmitted helminths

Executive summary

Evidence Action's Deworm the World Initiative supports governments with technical assistance for school-based deworming, including Kenya's National School-based Deworming Programme (NSBDP). The Deworm the World Initiative has supported the government of Kenya since 2012 to implement large-scale mass drug administration (MDA) to treat soil-transmitted helminths (STH) and schistosomiasis.

Evidence Action regularly monitors all its programs to ensure effective implementation and to identify areas for improvement. The NSBDP in Kenya is monitored annually to assess the rollout of the program. Evidence Action designed a sampling method and data collection tools to observe and review the quality and impact of sub-county trainings, teacher trainings, community health extension worker (CHEW) activities, community sensitization and MDA procedures. This report presents findings from data analysis conducted between years 2 to 5 of the program (2013 to 2017).

Assessment of sub-county trainings found that the distribution of training materials at sub-county level remained stable between years 2 and 4, then dropped in year 5 from 100 percent to 91 percent. The overall distribution rate of required materials (tablet poles, drugs, and data collection tools) in teacher trainings increased from years 2 to 5 from 80 percent to 91 percent. The disaggregated figure shows that the distribution of drugs in teacher trainings decreased in year 5 from 93 percent to 75 percent.

The percentage of topics 'completely' covered at trainings varied between years 2 to 5 at sub-county trainings and teacher trainings¹. While there was a drop in year 5 in topic coverage during trainings, post-test scores for STH remained stable amongst participants of both sub-county and teacher trainings between years 2 and 5². However, post-test scores for schistosomiasis treatment dropped in year 5 among both sub-county and teacher training participants.

The inclusion of new sub-counties in the NSBDP in year 5 could have contributed to decreased distribution of materials and topic coverage in trainings in year 5. In year 5, Evidence Action worked to align sub-counties as captured by the Ministry of Health (MoH) and Ministry of Education (MoE) units, which resulted in the inclusion of 13 new sub-counties in the program, along with additional new officers who were not experienced in their communication and interaction with the program. Although there was no change in implementation strategy, this inclusion could have created confusion in last mile-distribution of training materials and drugs as well as affected the quality of training delivered at sub-county and subsequently teacher training.

¹ The term "completely" refers to whether or not the trainer covered the prescribed content of the topic according to the training manual and presentations.

² In Kwale, STH treatment for year 5 was conducted at community level and therefore these activities are not included in this report.

Overall, head teachers demonstrated that schools were prepared for Deworming Day, with plans in place for treatment in most cases. The percentage of teachers that trained additional teachers in schools remained stable and over 80 percent from years 2 to 5.

Children and teachers remain the main sources of information about the program for parents of enrolled children. For the parents of non-enrolled children, sources of information were broader, with friends and relatives being the most common source of information. The data suggests that word of mouth through children, teachers, CHEWs/CHVs remains the most effective method to inform parents of both enrolled and non-enrolled children about Deworming Day.

Introduction

Evidence Action's Deworm the World Initiative supports governments with technical assistance for school-based deworming, including Kenya's National School-based Deworming Programme (NSBDP). The Deworm the World Initiative has supported the government of Kenya since 2012 to implement large-scale mass drug administration (MDA) to treat soil-transmitted helminths (STH) and schistosomiasis.

To effectively implement the MDA the NSBDP runs an annual training cascade that delivers vital program information and materials from the national level all the way down to communities and schools. A key process for the program, a random sample of these trainings are monitored and assessed each year. To record treatment coverage, schools complete a set of forms during the drug administration process, which are then returned to county health officials and ultimately to the national level for data aggregation. This constitutes program performance data.

Evidence Action regularly monitors process and performance indicators for its programs to ensure effective implementation and to identify areas for improvement. Every year, Evidence Action has monitored NSBDP activities to assess the quality and impact of sub-county trainings, teacher trainings, community health extension worker (CHEW) activities, community sensitization, and deworming day procedures. The following report summarizes the findings from five years of process monitoring activities carried out by Evidence Action.

Methodology

To assess both the quality of sub-county and teacher training sessions as well as the implementation of the deworming process in schools, Evidence Action randomly sampled 35% of sub-county trainings, 10% of the teacher training sessions, and 2% of schools that participated in Deworming Day. To see the sample sizes used each year please refer to Table 1 below.

Monitoring teams observed sub-county and teacher trainings and tested participants' pre and post-training knowledge on STH and schistosomiasis treatment. Prior to Deworming Day monitoring teams interviewed CHEWs, CHVs, early childhood development (ECD) school teachers, parents of both enrolled and non-enrolled children, and head teachers at selected primary schools. On Deworming Day monitoring

teams observed deworming activities in schools and interviewed ECD teachers, primary school teachers, CHEWs, CHVs and health officials. To see the number of CHEWs, teachers and parents interviewed year on year, please refer to Table 1.

Evidence Action carried out coverage validation surveys in schools post-deworming to validate program treatment coverage. The survey targeted the treatment of enrolled school-age children (SAC). The methodology and data collected to validate coverage varied year on year but the sample was always selected to meet a 95% confidence level and 10% margin of error.

Table 1. Methodology for process monitoring review³

	Year 2	Year 3	Year 4	Year 5
Total number of sub-county trainings delivered	111	111	111	123
<i>STH</i>	80	105	77	87
<i>STH + schistosomiasis</i>	31	6	34	36
Total number of sub-county trainings observed	46	38	39	44
<i>STH</i>	35	26	25	31
<i>STH + schistosomiasis</i>	11	12	14	13
Total number of teacher trainings delivered	849	860	897	883
Total number of teacher trainings observed	84	76	52	86
<i>STH</i>	NA	63	10	58
<i>STH + schistosomiasis</i>	NA	13	42	28
Number of health officers interviewed on Deworming Day (CHEW, CHV, Health officer, Division PHO)	NA	224	236	272
Number of ECD teachers interviewed on Deworming Day	190	253	273	203
<i>STH</i>	NA	243	26	187
<i>STH + schistosomiasis</i>	NA	10	130	16
Total number of schools reached	14,592	15,790	16,304	16,488
<i>STH</i>	13,018	15,556	14,900	14,872
<i>STH + schistosomiasis</i>	1,574	234	1,404	1,616
Total number of schools visited on Deworming Day	185	254	308	336
<i>STH</i>	NA	247	265	296
<i>Schistosomiasis</i>	NA	7	43	40
Total parents interviewed	436	716	781	600
Number of parents of enrolled children interviewed	NA	379	508	365
Number of parents of non-enrolled children interviewed	NA	337	273	235

³ Na=Data not available

Results

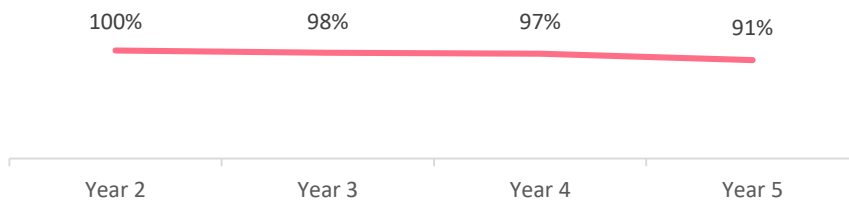
Sub-county trainings

On average, the monitoring team observed 42 sub-county trainings each year between years 2 to 5. The monitoring team assessed attendance and time taken to complete the training, whether required materials were distributed, and if all training topics were covered completely. On average, the monitoring team interviewed 164 sub-county officials before training and 144 officials after training to test pre and post-training knowledge⁴ on STH and schistosomiasis treatment.

Distribution of materials

The distribution of sub-county training booklets at trainings remained stable from year 2 to 4 and dropped by 6% in year 5. Nevertheless, the distribution rate remained above 90% year on year (**figure 1**).

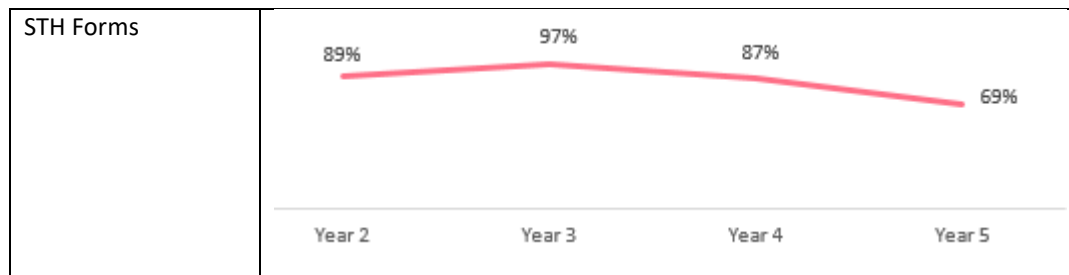
Figure 1. Distribution of sub-county training booklets at training sessions⁵



Topics covered during sub-county training

The monitoring team assessed whether each training topic was completely covered during training. The term “completely” refers to whether or not the trainer covered the prescribed content of the topic according to the training manual and presentations. The data found that content coverage varied per topic. The percentage of trainings where topics had been ‘completely’ covered increased every year for the topic *reverse cascade* and decreased year on year for *SCH form* and *drug administration*. For *STH forms, worms and drugs and dosage* topic coverage remained stable from year 2 to 4, before dropping in year 5 (**figure 2**).

Figure 2. Extent to which different topics were covered during sub county training sessions⁶



⁴ Averages calculated on year 3-5 data. Numbers of sub county officials interviewed in year 2 is not available.

⁵ N=Year 2:46 ; Year 3:38; Year 4:39; Year 5:44

⁶ N=Year 2: 46; Year 3: 38; Year 4: 39; Year 5: 44

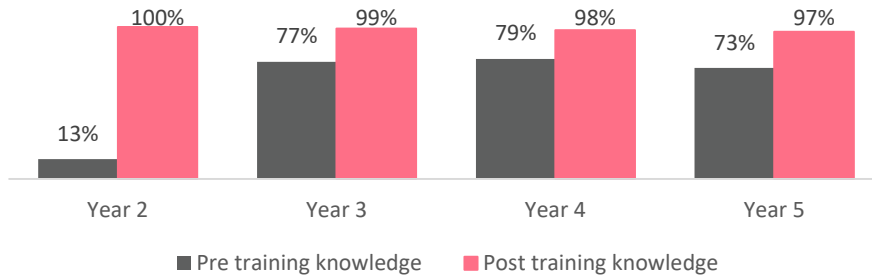
SCH forms	<p>A line chart showing the percentage of correct answers for 'SCH forms' over five years. The data points are: Year 2 (94%), Year 3 (72%), Year 4 (63%), and Year 5 (28%). The line starts at 94% in Year 2, drops to 72% in Year 3, further to 63% in Year 4, and ends at 28% in Year 5.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 2</td> <td>94%</td> </tr> <tr> <td>Year 3</td> <td>72%</td> </tr> <tr> <td>Year 4</td> <td>63%</td> </tr> <tr> <td>Year 5</td> <td>28%</td> </tr> </tbody> </table>	Year	Percentage	Year 2	94%	Year 3	72%	Year 4	63%	Year 5	28%
Year	Percentage										
Year 2	94%										
Year 3	72%										
Year 4	63%										
Year 5	28%										
Worms	<p>A line chart showing the percentage of correct answers for 'Worms' over five years. The data points are: Year 2 (85%), Year 3 (87%), Year 4 (85%), and Year 5 (50%). The line starts at 85% in Year 2, rises to 87% in Year 3, falls to 85% in Year 4, and ends at 50% in Year 5.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 2</td> <td>85%</td> </tr> <tr> <td>Year 3</td> <td>87%</td> </tr> <tr> <td>Year 4</td> <td>85%</td> </tr> <tr> <td>Year 5</td> <td>50%</td> </tr> </tbody> </table>	Year	Percentage	Year 2	85%	Year 3	87%	Year 4	85%	Year 5	50%
Year	Percentage										
Year 2	85%										
Year 3	87%										
Year 4	85%										
Year 5	50%										
Drugs and dosage	<p>A line chart showing the percentage of correct answers for 'Drugs and dosage' over five years. The data points are: Year 2 (80%), Year 3 (89%), Year 4 (91%), and Year 5 (47%). The line starts at 80% in Year 2, rises to 89% in Year 3, peaks at 91% in Year 4, and ends at 47% in Year 5.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 2</td> <td>80%</td> </tr> <tr> <td>Year 3</td> <td>89%</td> </tr> <tr> <td>Year 4</td> <td>91%</td> </tr> <tr> <td>Year 5</td> <td>47%</td> </tr> </tbody> </table>	Year	Percentage	Year 2	80%	Year 3	89%	Year 4	91%	Year 5	47%
Year	Percentage										
Year 2	80%										
Year 3	89%										
Year 4	91%										
Year 5	47%										
Drug administration	<p>A line chart showing the percentage of correct answers for 'Drug administration' over five years. The data points are: Year 2 (100%), Year 3 (90%), Year 4 (74%), and Year 5 (41%). The line starts at 100% in Year 2, drops to 90% in Year 3, further to 74% in Year 4, and ends at 41% in Year 5.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 2</td> <td>100%</td> </tr> <tr> <td>Year 3</td> <td>90%</td> </tr> <tr> <td>Year 4</td> <td>74%</td> </tr> <tr> <td>Year 5</td> <td>41%</td> </tr> </tbody> </table>	Year	Percentage	Year 2	100%	Year 3	90%	Year 4	74%	Year 5	41%
Year	Percentage										
Year 2	100%										
Year 3	90%										
Year 4	74%										
Year 5	41%										
Reverse cascade	<p>A line chart showing the percentage of correct answers for 'Reverse cascade' over five years. The data points are: Year 2 (75%), Year 3 (84%), Year 4 (81%), and Year 5 (85%). The line starts at 75% in Year 2, rises to 84% in Year 3, falls to 81% in Year 4, and ends at 85% in Year 5.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 2</td> <td>75%</td> </tr> <tr> <td>Year 3</td> <td>84%</td> </tr> <tr> <td>Year 4</td> <td>81%</td> </tr> <tr> <td>Year 5</td> <td>85%</td> </tr> </tbody> </table>	Year	Percentage	Year 2	75%	Year 3	84%	Year 4	81%	Year 5	85%
Year	Percentage										
Year 2	75%										
Year 3	84%										
Year 4	81%										
Year 5	85%										

Sub-county training participant pre and post-training knowledge on STH

Every year the monitoring team assessed training participants’ pre and post-training knowledge on STH treatment. Prior to doing so they checked whether participants had attended any previous training on STH, or had prior knowledge of the infections and their treatment. The percentage of participants who said they had attended a previous training or had prior knowledge of STH remained stable, above 95% from years 3 to 5.

Figure 3 shows that sub-county training participants’ post-test scores on STH were stable year on year. Participants’ pre-training knowledge experienced a large increase from year 2 to year 3, then stabilized from years 3 to 5 (**figure 3**).

Figure 3. Sub-county training participant’s knowledge pre and post training on STH treatment⁷

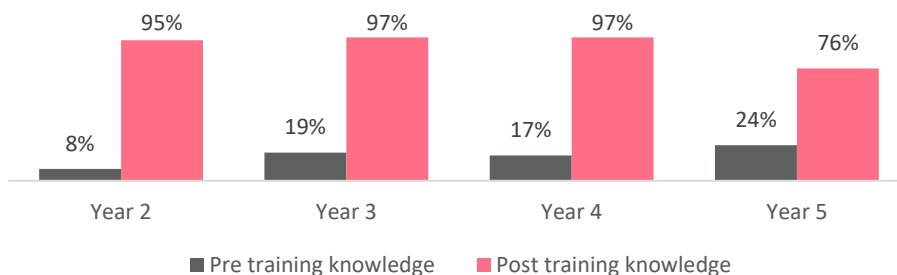


Sub-county training participants pre and post-training knowledge on schistosomiasis

Every year the monitoring team assessed training participants’ pre and post-training knowledge on schistosomiasis treatment. Prior to doing so they checked whether participants had attended any previous training on schistosomiasis, or had prior knowledge of the infection and its treatment. The percentage of participants who had attended a previous training or had prior knowledge on schistosomiasis treatment decreased from 64% in year 3 to 48% in year 5.

Year on year pre-test scores among training participants were lower for schistosomiasis treatment than for STH treatment. However, pre-test scores for schistosomiasis treatment rose from year 2 to year 5. Post-training scores remained stable from year 2 to 4, before dropping to 76% in year 5 (**figure 4**).

Figure 4. Sub-county training participants’ knowledge pre and post training on schistosomiasis treatment⁸



Conclusion: Sub county training

The distribution of sub-county training booklets at trainings remained stable from year 2 to 4 and dropped in year 5. The extent to which different training topics were ‘completely’ covered in training sessions

⁷ Pre training participants N: Year 2:80; Year 3: 150; Year 4: 160; Year 5: 184. Post-training N: Year 2: 80; Year 3: 151; Year 4: 147; Year 5: 134

⁸ Pre training participants N: Year 2: Not available Year 3: 51; Year 4: 56 Year 5: 65. Post-training N: Year 2:Not available; Year 3: 50; Year 4: 49 Year 5: 92

varied per topic, with 5 out of 6 topics experiencing a drop in year 5. At the same time post-test scores on STH remained stable, while post-test scores on schistosomiasis treatment decreased slightly among training participants in year 5.

Training participants’ pre and post-test scores showed that, compared to STH treatment, pre-test knowledge was lower for schistosomiasis. This suggests that training content for schistosomiasis treatment is more complex, with participants struggling to retain knowledge every year.

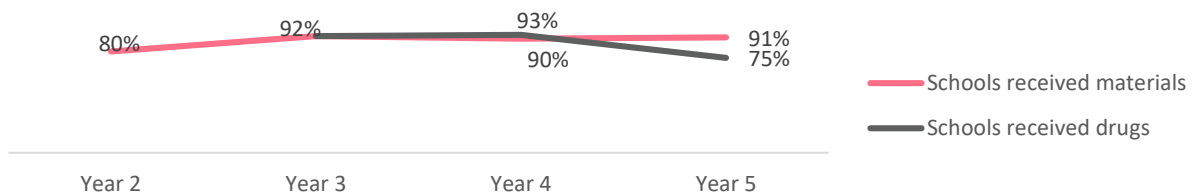
Teacher training

On average, the monitoring team observed 75 teacher trainings annually between years 2 to 5 of the NSBDP. The monitoring team assessed the attendance and time taken to complete the training, whether required materials were distributed, and if all trainings topics were completely covered. On average, the monitoring team interviewed 217 teachers prior to training and 213 teachers post training to test for knowledge on STH and schistosomiasis treatment.⁹

Distribution of materials

The percentage of teacher trainings where all schools received the required training materials increased from years 2 to 5. “Required” training materials are defined as monitoring forms, posters, drugs and tablet poles. However, when this figure was broken down the percentage of trainings where all schools present received drugs remained the same between years 3 and 4 and decreased in year 5 to 75% (figure 5). In year 3, tablet poles were distributed in 70% of all trainings that covered schistosomiasis treatment. In year 5, tablet poles were only distributed in 3% of trainings that covered schistosomiasis treatment (data was not available for year 4). This is likely because schools retained their tablet poles over the years.

Figure 5. Trainings where all schools present received materials¹⁰

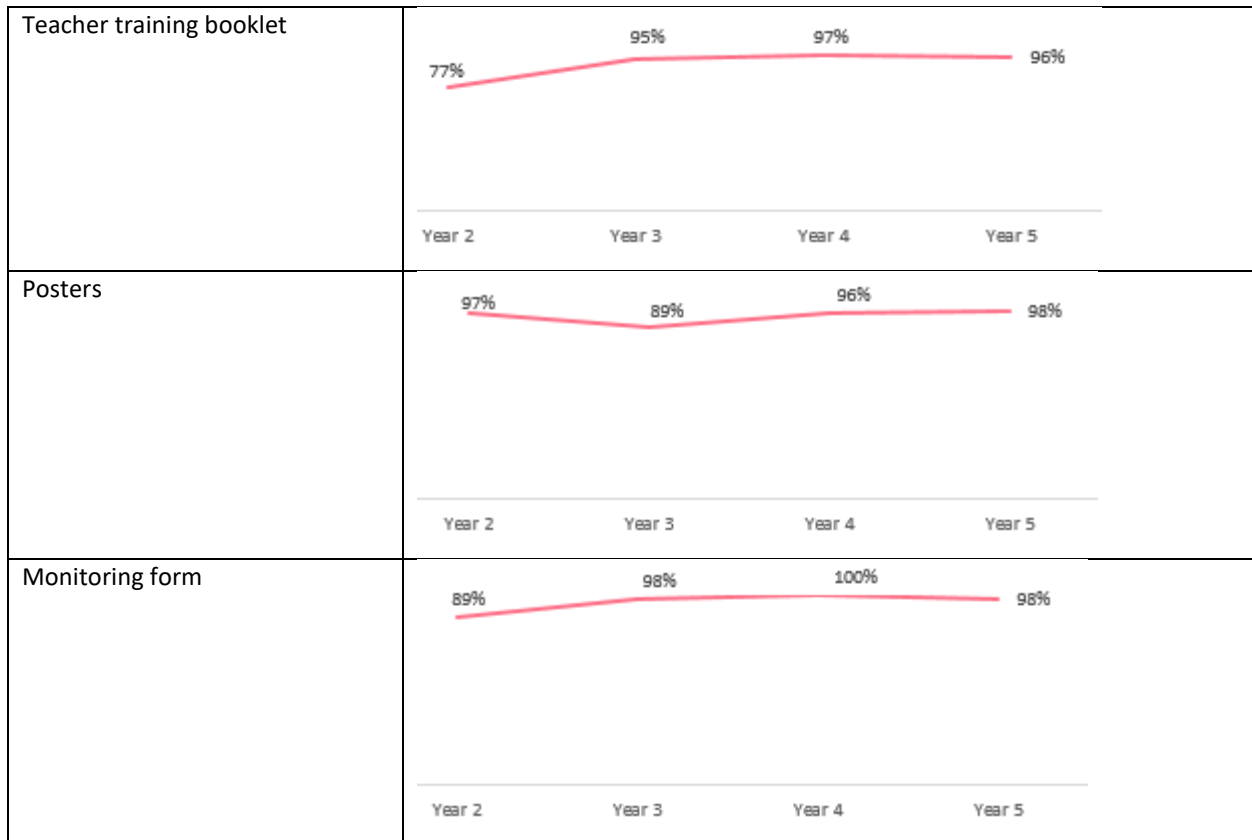


The trainers also gave teachers a reference booklet. The proportion of teachers who attended training and received the training booklet, monitoring forms, and posters increased between years 2 and 5 (figure 6).

⁹ Averages calculated on year 3-5 data. Numbers of sub county officials interviewed in year 2 is not available.

¹⁰ N=Year 2: 84; Year 3: 76; Year 4: 52; Year 5: 86

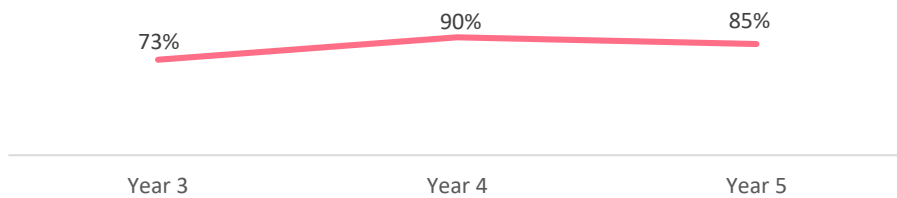
Figure 6. Teachers who attended training and received materials¹¹



Topics covered during training

The percentage of teacher training sessions where trainers covered all the steps in the teacher training checklist increased between years 3 and 5 (figure 7).

Figure 7. Percentage of teacher training sessions where trainers covered all the steps in the teacher training checklist¹²



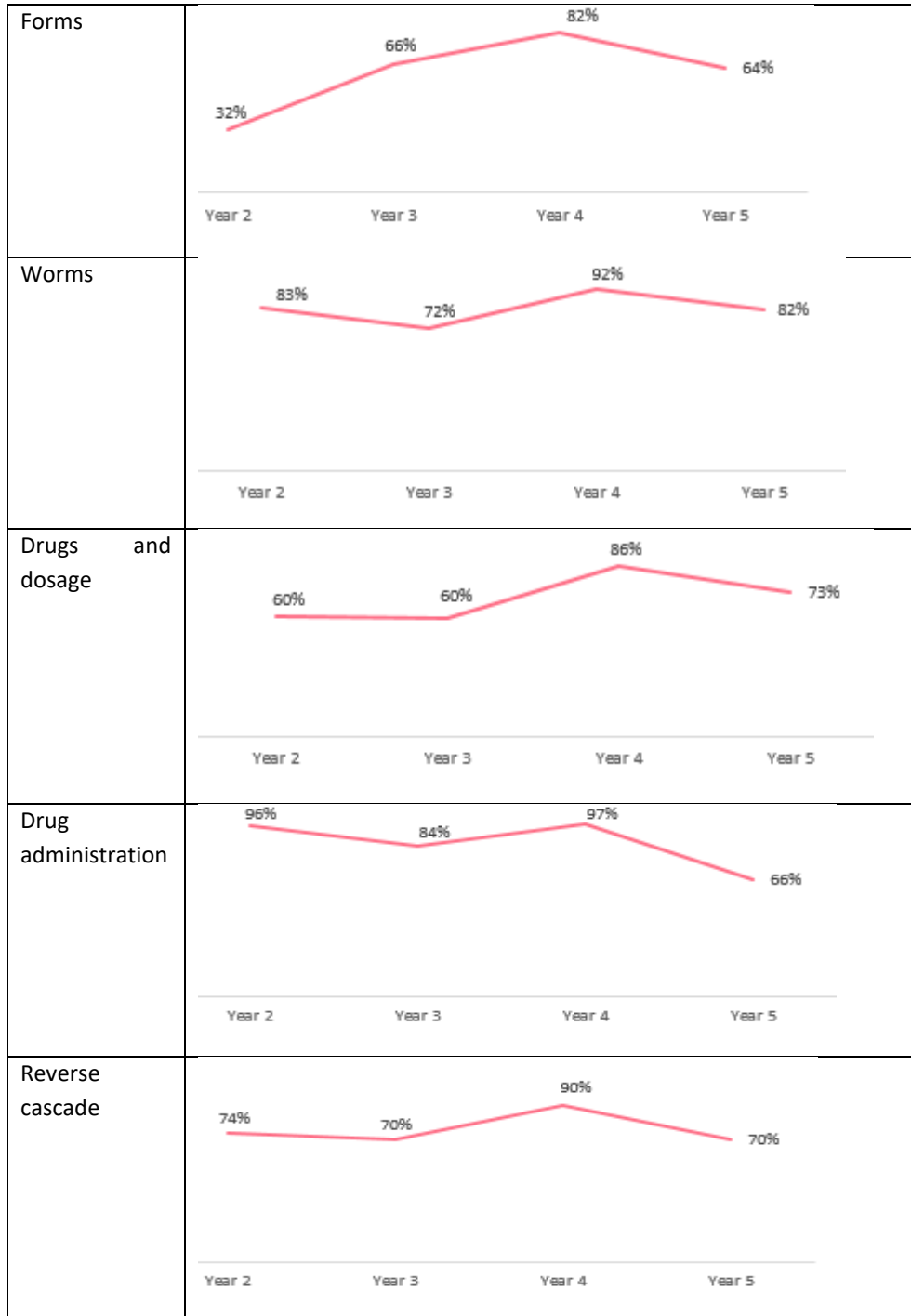
The monitoring team assessed whether each topic was ‘completely’ covered during training. Throughout the years, the percentage of teacher trainings completely covering the topics *forms* and *drugs and dosage*

¹¹ N=Year 2: 84; Year 3: 76; Year 4: 52; Year 5: 86

¹² N=Year 2: 84; Year 3: 76; Year 4: 52; Year 5: 86

increased, while only coverage of the topic *drug administration* decreased. All five topics saw an increase in attention during year 4 and a drop in year 5 (**figure 8**).

Figure 8. Extent of different topics covered during the training sessions¹³

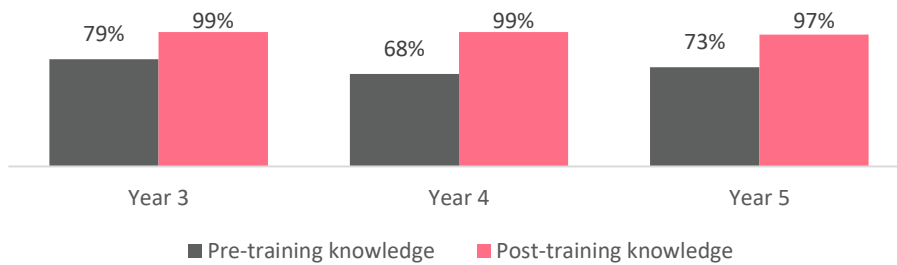


¹³ N=Year 2: 84; Year 3: 76; Year 4: 52; Year 5: 86

Teacher’s pre and post-training knowledge on STH

Every year the monitoring team assessed training participants’ pre and post-training knowledge on STH treatment. Prior to doing so, they checked whether participants had attended any previous training on STH, or prior knowledge of the infections and their treatment. The percentage of participants who had attended a previous training or had prior knowledge on STH was 93% in year 3; 88% in year 4, and 92% in year 5. Participant pre-test scores on STH treatment decreased after year 3 and increased again in year 5. Post-test scores remained stable, above 95%, year on year (**figure 9**).

Figure 9. Teacher training participant’s knowledge pre and post training knowledge on STH treatment¹⁴

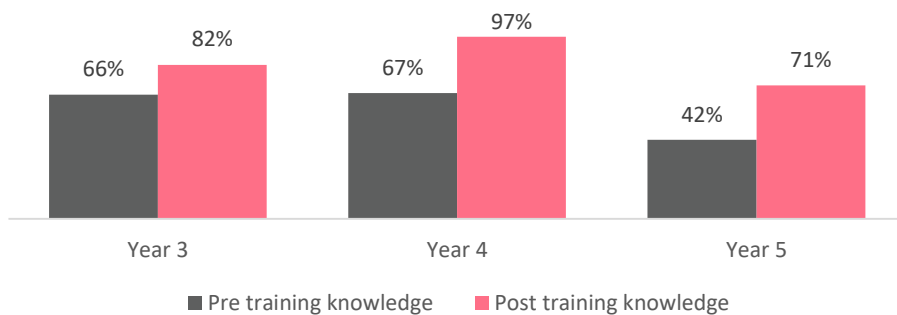


Teacher pre and post training knowledge on schistosomiasis

Every year the monitoring team assessed training participants’ pre and post-training knowledge on schistosomiasis treatment. Again, they first checked whether participants had attended any previous training on schistosomiasis, or had prior knowledge of the infection and its treatment. The percentage of participants who had attended a previous training session or had prior knowledge on schistosomiasis treatment was 38% in year 3; 44% in year 4, and 59% in year 5.

Participants’ pre-test and post-test scores for schistosomiasis both decreased between years 4 and 5. Both pre and post-test scores were also lower in years 3 and 5 for schistosomiasis treatment than for STH (**figure 10**).

Figure 10. Teacher training participants’ knowledge pre and post-training knowledge on schistosomiasis treatment¹⁵



¹⁴ Pre-training n=Year 3: 316; Year 4: 221; Year 5: 366. Post-training n=Year 3: 300; Year 4: 218; Year 5: 363

¹⁵ Pre-training n=Year 3:52; Year 4: 39; Year 5:116. Post-training n=Year 3:53 ; Year 4:39 ; Year 5:121

Conclusion

The distribution of training materials remained stable across all years, with the exception of drug distribution, which decreased in year 5. While the percentage of trainers covering all steps in the teacher training checklist increased from years 3 to 5, the extent to which different topics were *completely* covered during training varied. The complete coverage of all five training topics decreased between year 4 and 5. Post-test knowledge for STH remained stable, while knowledge of schistosomiasis decreased among teachers between years 4 and 5. The less-complete coverage of training topics could be attributable the inclusion of new sub-counties participating in NSBDP who were not experienced in their communication and interaction with the program. They were less experienced trainers and may not have had as strong an understanding of the concepts as would be ideal.

The data suggests that any drop in post-training knowledge for schistosomiasis is more likely related to insufficient coverage of all training topics as opposed to absence of required training materials. The percentage of trainers completing all items on the training checklist has increased year on year suggesting that training fatigue is not the reason for a drop in complete coverage of training content.

CHEW Awareness and Activities

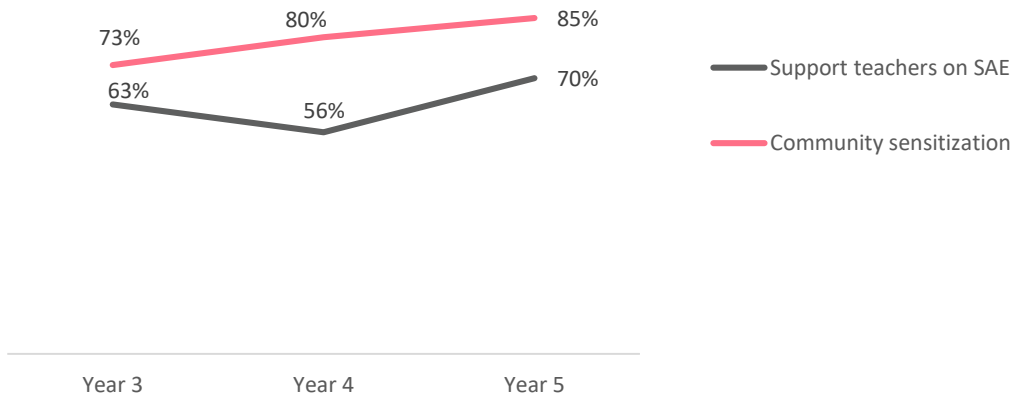
The monitoring team interviewed CHEWs prior to and on Deworming Day. CHEWs were asked to list their responsibilities on Deworming Day and demonstrate their awareness of handling severe adverse events (SAEs.) The data in this section is taken from CHEW interviews prior to Deworming Day. On average 110 CHEWs were interviewed annually¹⁶.

CHEW responsibilities on Deworming Day

As figures 11 shows, CHEWs saw their main responsibility on Deworming Day as *community sensitization* followed by *supporting teachers on severe adverse events* (**figure 11.**)

¹⁶ This average excludes year 2 data

Figure 11. CHEWs perception of their responsibilities on Deworming Day¹⁷



CHEW community sensitization methods

The majority of CHEWs displayed posters in local areas to sensitize communities about the upcoming Deworming Day. For all sensitization activities the percentage of CHEWs that carried out these activities increased from year 3 to year 5 (figure 12).

Figure 12. Primary sensitization activities carried out by CHEWs¹⁸

Display posters	<table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 3</td> <td>41%</td> </tr> <tr> <td>Year 4</td> <td>62%</td> </tr> <tr> <td>Year 5</td> <td>67%</td> </tr> </tbody> </table>	Year	Percentage	Year 3	41%	Year 4	62%	Year 5	67%
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Year 4	62%								
Year 5	67%								
Discuss deworming at <i>barazas</i>	<table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 3</td> <td>51%</td> </tr> <tr> <td>Year 4</td> <td>52%</td> </tr> <tr> <td>Year 5</td> <td>54%</td> </tr> </tbody> </table>	Year	Percentage	Year 3	51%	Year 4	52%	Year 5	54%
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Year 5	54%								
Discuss deworming at health days	<table border="1"> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Year 3</td> <td>31%</td> </tr> <tr> <td>Year 4</td> <td>28%</td> </tr> <tr> <td>Year 5</td> <td>32%</td> </tr> </tbody> </table>	Year	Percentage	Year 3	31%	Year 4	28%	Year 5	32%
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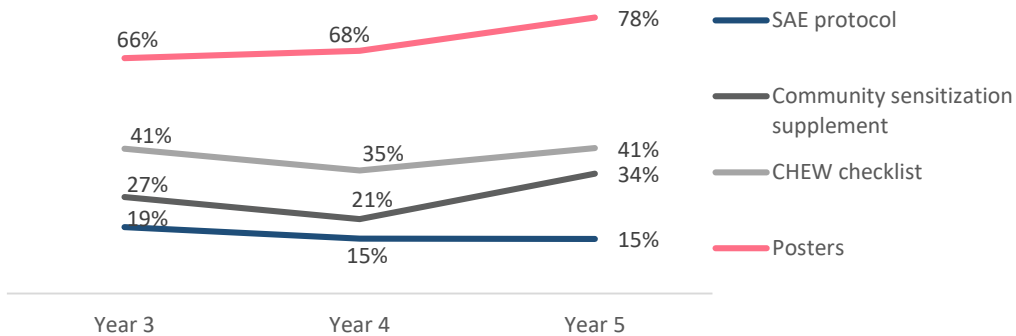
¹⁷ N=Year 3: 59; Year 4: 110; Year 5: 157

¹⁸ N=Year 3: 59; Year 4: 110; Year 5: 157

Conduct health education classes	
Conduct ECD outreach	
No activities conducted	

Across all years, the majority of CHEWs said that they referred to the content on the posters to explain Deworming Day to community members. Other materials used by CHEWs included the CHEW checklist, the community sensitization supplement and the SAE protocol. In year 4 the use of all community materials dipped slightly among CHEWs before increasing again in year 5 (**figure 13**).

Figure 13. Materials used by CHEWs for community sensitization¹⁹

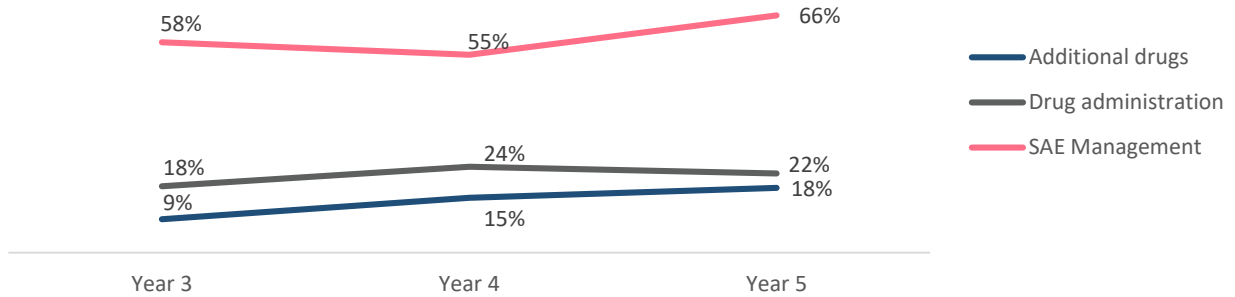


Support requested from teachers

Since year 3 a greater number of teachers have required CHEW support for handling SAEs and sourcing additional drugs. Fewer CHEWs reported teachers needing guidance on drug administration (**figure 14**).

¹⁹ N=Year 3:59; Year 4: 110; Year 5: 157

Figure 14. Type of support required by teachers from CHEWs²⁰



CHV awareness of Deworming Day and sources of information

The monitoring team interviewed CHVs to assess their awareness of Deworming Day and sources of information on the deworming exercise. They also tested CHVs’ knowledge on key aspects of Deworming Day. In years 2 and 3 the monitoring team carried out combined CHV/CHEW interviews on Deworming Day. In years 4 and 5 CHVs were interviewed separately prior to Deworming Day. This report presents years 4 and 5 data. In year 4, 109 CHVs were interviewed and in year 5, 157 CHVs were interviewed.

CHV awareness of Deworming Day

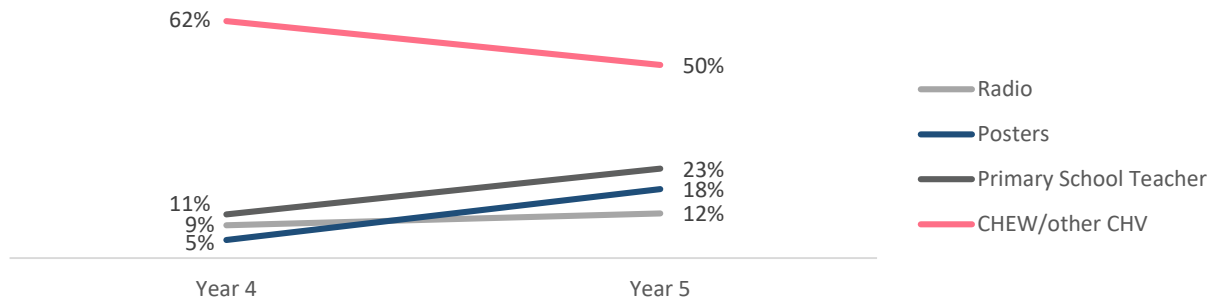
In both year 4 and 5, the percentage of CHVs interviewed who were aware that Deworming Day would be happening in schools in their local area remained stable (84% and 85% of CHVs, respectively). When asked, 79% of CHVs in both years 4 and 5 could provide the correct age group for STH treatment.

CHV sources of information on Deworming Day

CHEWs or another CHV remained the most common source of Deworming Day information for CHVs in both years 4 and 5. However, between year 4 and year 5 the percentage of CHVs sourcing information from another CHV or CHEW dropped from 62% to 50%, while other sources such as primary school teachers, posters and radio broadcasts increased in varying degrees (**figure 15**).

²⁰ N=Year 3:59; Year 4: 110; Year 5: 157

Figure 15. CHV sources of information on Deworming Day²¹



Conclusion

Across all years, CHEWs had a consistent understanding of the deworming program and their role in it. Posters remained the most common means by which CHEWs carried out community sensitization and were the most frequently used material when explaining Deworming Day to community members. The majority of CHVs sourced information about deworming from other CHVs or CHEWS, but with a drop between years 4 and 5.

School preparation for deworming day

The monitoring team visited a sample of schools prior to Deworming Day to assess preparedness for the deworming exercise, teacher knowledge on drug administration procedures, and deworming sensitization activities. On average 232 schools were visited prior to Deworming Day each year.

Head teacher plans for Deworming Day

In years 4 and 5 the monitoring team asked head teachers about their plans for implementing Deworming Day. In both years the majority of head teachers were able to explain where they planned to deworm children, who would do the deworming, and who would be responsible for handling ECD children.

In year 4 the majority of head teachers planned to deworm children inside the classroom (56%), followed by outside the classroom (42%). In year 5, the majority of head teachers planned to deworm children outside the classroom (50%), followed by inside the classroom (35%).

The majority of head teachers in year 4 planned to rely on teachers trained at the teacher training sessions for the drug administration (32%), while slightly fewer planned to involve all teachers in the school (29%) to deworm the students. In year 5 the majority planned to involve the two teachers that attended training (33%) followed by all teachers (15%).

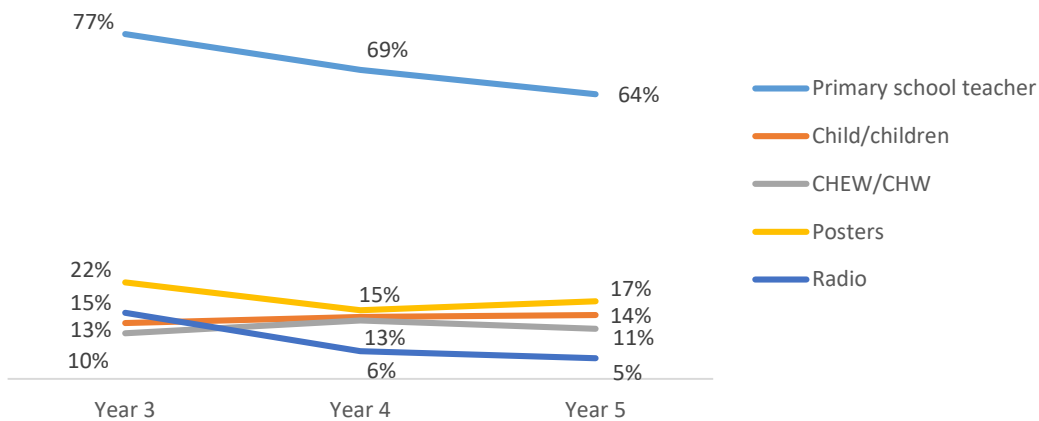
²¹ N=Year 4: 109; Year 5: 157

In year 4, 70% of head teachers said that someone had notified the affiliated ECD center that deworming would be taking place. The majority (61%) of head teachers expected a teacher from the ECD center to administer the drugs while 34% of head teachers planned for a primary school teacher to administer the drugs. In year 5, a nearly equivalent proportion (69%) of head teachers had notified the affiliated ECD center that deworming would be taking place. A smaller majority (45%) of them expected the ECD teacher to administer the drugs but a nearly consistent 33% planned for a primary school teacher to do so.

ECD awareness

On Deworming Day, the monitoring team asked ECD teachers about their main source of information on the deworming exercise. As figure 16 shows the, majority of ECD centers heard about Deworming Day from a primary school teacher. However, the percentage of ECD teachers hearing about Deworming Day from a primary school teacher decreased between years 3 and 5 (figure 16).

Figure 16. ECD teacher information sources on Deworming Day²²

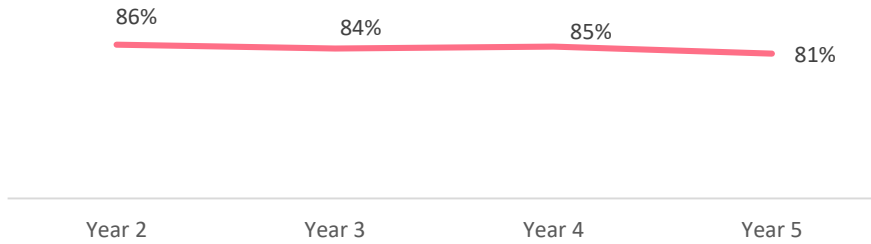


Teacher sensitization in schools

The percentage of teachers that trained others at their school remained stable, with over 80% from year 2 to year 5 (figure 16.)

²² N=Year 3: 88; Year 4: 130; Year 5: 203

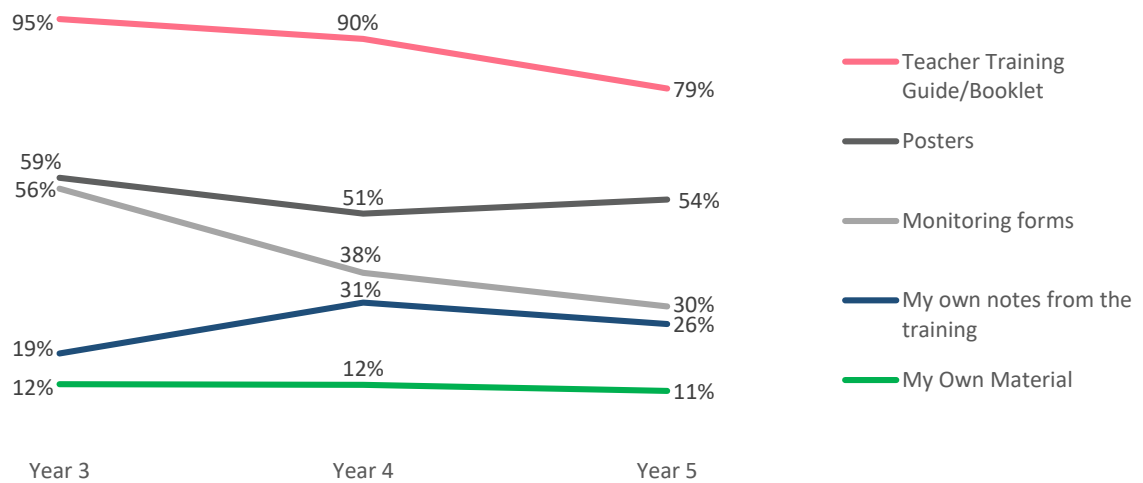
Figure 17. Teachers that trained others at their school²³



The majority of trained teachers used the training guide to train other teachers in their school in preparation for Deworming Day. However, the percentage of trained teachers using the guide decreased from year 4 to year 5, which may be the result of transitioning from providing two training guides per school in year 3 and 4, to one per school in year 5 (figure 18). In year 3, 93% of teachers found the training guide useful and by year 5 this had increased to 99% of all teachers interviewed.

Head teachers interviewed in years 4 and 5 demonstrated good knowledge on the correct dosage and treatment age for STH²⁴ (figure 19).

Figure 18. Materials used by teachers to train others about Deworming Day²⁵

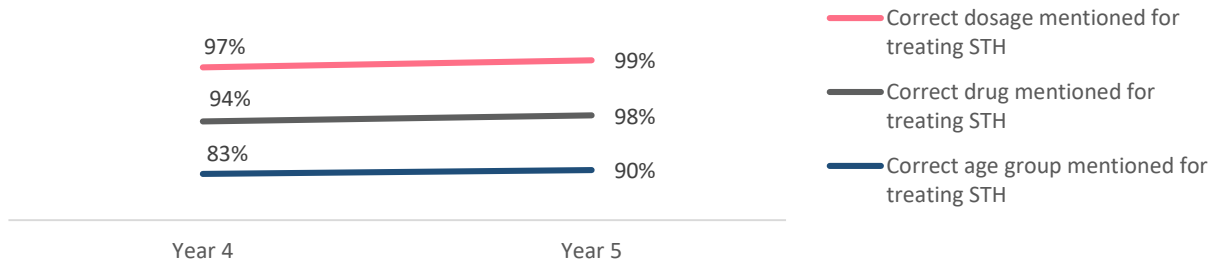


²³ N=Year 2: 185; Year 3: 254; Year 4: 308; Year 5: 336

²⁴ Data not available years 2-3. Data not provided for schistosomiasis

²⁵ N=Year 3: 256; Year 4: 269; Year 5: 303

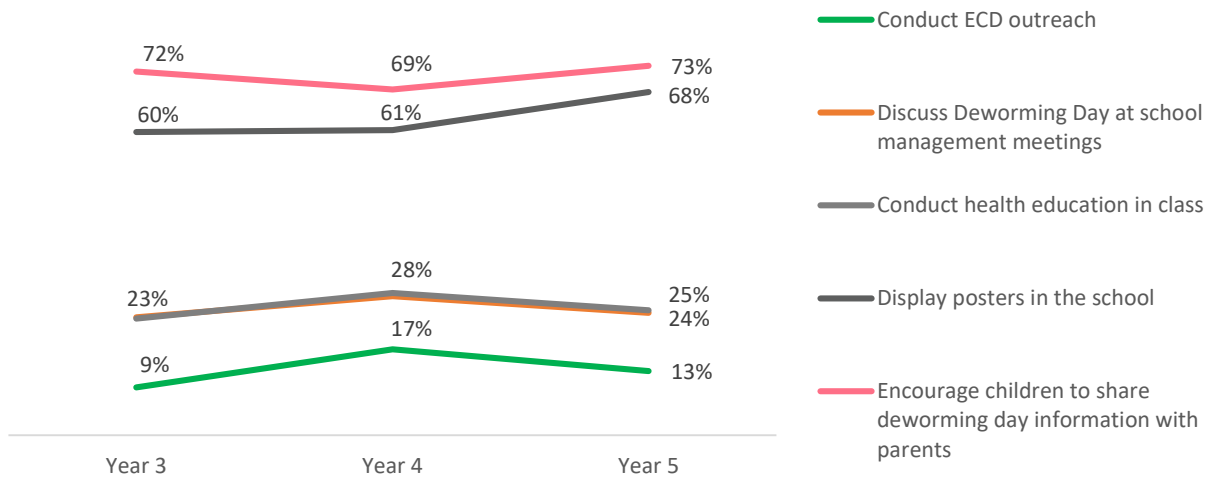
Figure 19. Percentage of head teachers who could correctly identify drug, dosage and age group for STH²⁶



School sensitization activities

Across years 3 to 5, the majority of schools sensitized children during class and displayed posters in the school to transmit information in preparation for Deworming Day (figure 20). Across years 3 to 5 only 2% of schools said they had done no sensitization activities at all.

Figure 20. School sensitization activities in preparation for Deworming Day²⁷



Conclusion

Between years 3 and 5 the majority of schools visited prior to Deworming Day had plans to manage the deworming exercise. Efforts to sensitize children on deworming remained high across years 3 to 5 and the percentage of teachers that trained others at their school remained stable, over 80% from years 2 to 5.

The use of the teacher training booklets as a training guide decreased in year 5, which may be explained by a change in program strategy to transition from providing two guides per school to one per school in

²⁶ N=Year 4: 269; Year 5: 303

²⁷ N=Year 3: 256; Year 4: 269; Year 5: 303

year 5. The percentage of schools informing ECD centers about Deworming Day reduced between years 4 and 5. This was in turn reflected by lower percentages of ECD teachers saying that they had learnt about Deworming Day from primary school teachers.

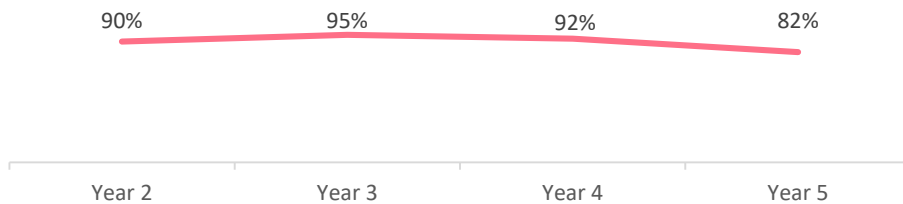
Deworming Day assessment

The monitoring team visited a sample of target schools on Deworming Day. They observed the drug distribution process and interviewed teachers about community sensitization activities. On average the monitoring team observed 271 schools each year.

Schools have required materials for deworming

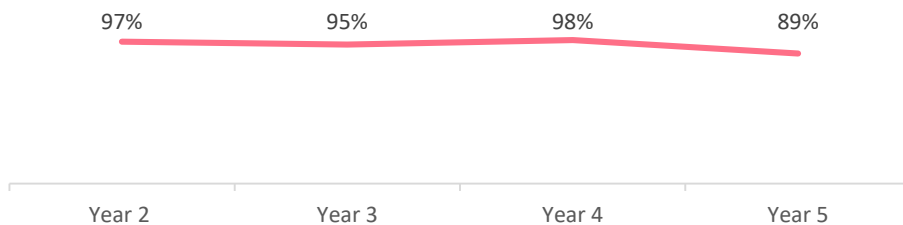
Initially, the percentage of schools that received tablets prior to Deworming Day remained stable, above 90%, from year 2 to year 4. However, there was a decrease from 92% to 82% in year 5 (**figure 21**).

Figure 21. Schools that received deworming tablets prior to Deworming Day²⁸



There was a similar trend in the percentage of schools with a sufficient supply of reporting forms, which remained stable over 95% from year 2 to year 4, but decreased in year 5 to 89% (**figure 22**).

Figure 22. Schools that had sufficient supply of forms for documenting the treatment of children²⁹



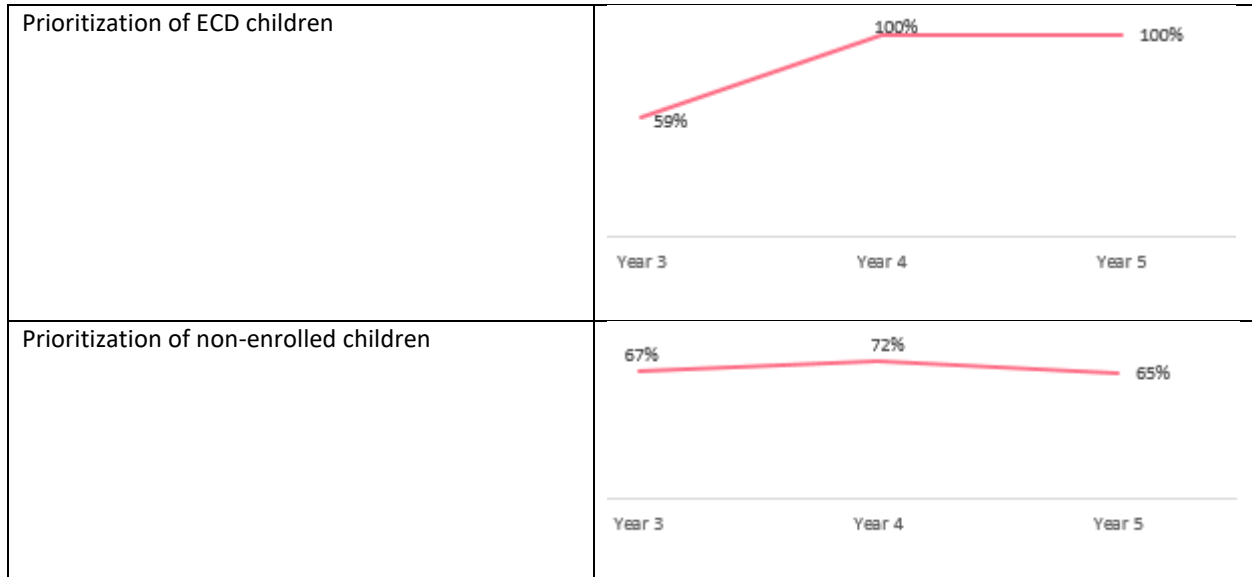
²⁸ N= Year 2: 185; Year 3: 254; Year 4: 308; Year 5: 336

²⁹ N=Year 2: 185; Year 3: 254; Year 4: 308; Year 5: 336

Schools that prioritized non-enrolled and ECD children on Deworming Day

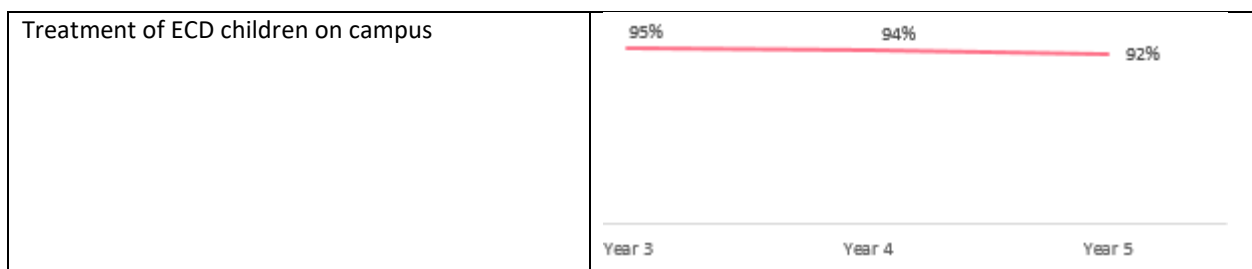
The percentage of schools prioritizing the treatment of ECD children increased significantly from 59% in year 3 to 100% in years 4 and 5. However, the percentage of schools prioritizing treatment of non-enrolled children showed little change but decreased slightly in year 5 to 65% (figure 23).

Figure 23. School prioritization of non-enrolled and ECD children for treatment³⁰



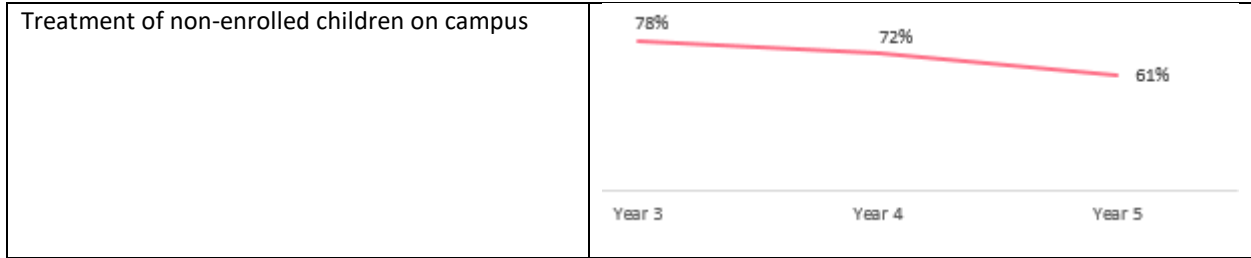
The presence of any treatment of ECD children on campus remained stable, above 90%, from years 3 to 5. The treatment of non-enrolled children on campus decreased between years 3 and 5 (figure 24).

Figure 24. Percentage of ECD children and non-enrolled children being treated on campus³¹



³⁰ N=Year 2: 185; Year 3: 254; Year 4: 308; Year 5: 336

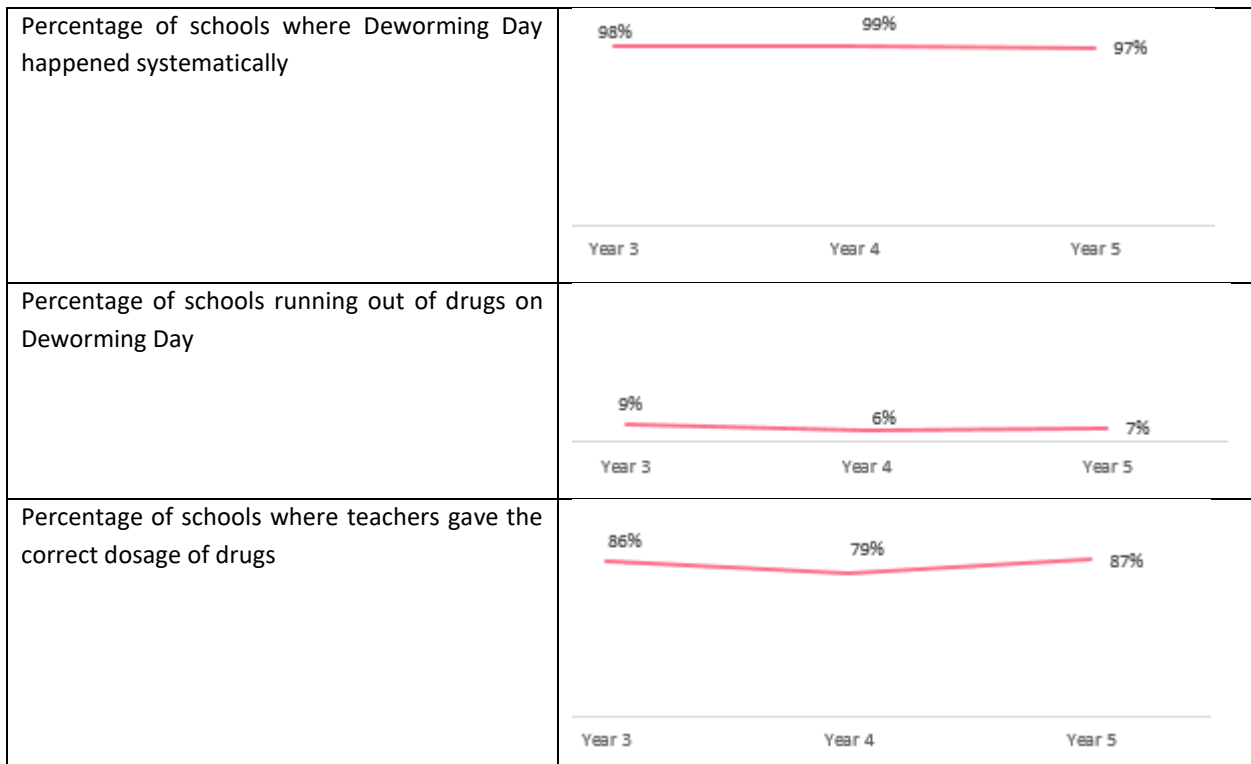
³¹ N=Year 2: 185; Year 3: 254; Year 4: 308; Year 5: 336



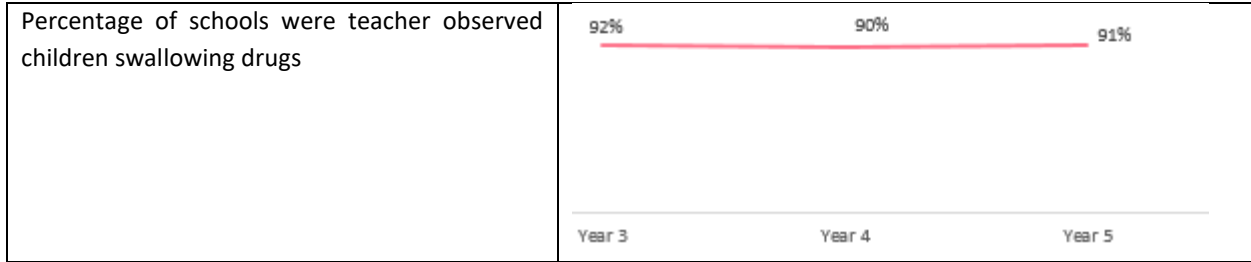
Treatment observation

The four indicators in figure 25 show high performance by schools in drug administration year on year for sampled schools. Broadly, treatment was well organized throughout the years. The percentage of schools where Deworming Day was perceived to happen systematically (against an agreed checklist) and the percentage of schools where teachers observed children swallowing drugs was consistently above 90%. The percentage of schools that ran out of drugs was consistently below 10% (**figure 25**).

Figure 25. Treatment observation (for both STH and schistosomiasis)³²



³² N=Year 2: 185; Year 3: 254; Year 4: 308; Year 5: 336



Conclusion

The percentage of schools with drugs available prior to deworming day remained stable from years 2 to 4 and decreased in year 5. The percentage of schools that ran out of drugs remained consistently low between years 3 and 5. The percentage of schools that gave the correct dosage of drugs, schools where Deworming Day took place systematically, and schools where teachers observed children swallowing the drugs continued to be high in all years. The percentage of schools that prioritized deworming of ECD children increased significantly by years 4 and 5. By contrast, the percentage of schools prioritizing non-enrolled children decreased, but only slightly; as access to free education widens in Kenya, there are fewer non-enrolled children overall, which makes them an even less visible or prioritized group.

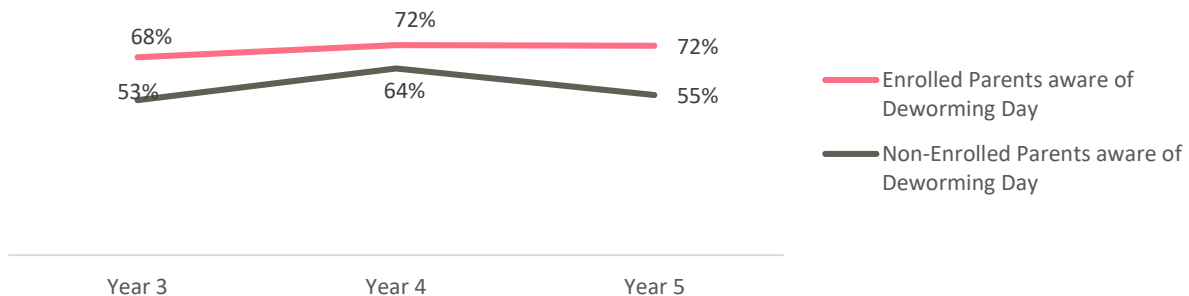
Parent interviews prior to Deworming Day

The monitoring team interviewed parents of both enrolled and non-enrolled children prior to Deworming Day. The purpose of these interviews was to assess parent knowledge of Deworming Day and to identify their sources of information. On average 417 enrolled parents and 281 non-enrolled parents were interviewed each year.³³

Awareness of Deworming Day

For parents of both enrolled and non-enrolled children, awareness of Deworming Day increased from year 3 to year 5 (**figure 26**).

Figure 26. Parents interviewed aware of Deworming Day³⁴



³³ Data not available for year 2.

³⁴ N for parents of enrolled children=Year 3: 379; Year 4: 508; Year 5: 365. N for parent of non-enrolled children=Year 3:337; Year 4: 273; Year 5: 235

The percentage of parents of enrolled children who were aware of Deworming Day and planned to send their children for deworming remained stable, above 90% from years 3 to 5. For parents of non-enrolled children, the percentage decreased from year 4 to year 5 (**figure 27**). The percentage of all parents that planned to accompany their children for deworming decreased from year 4 to year 5 (**figure 28**).

Figure 27. Parents aware of Deworming Day who plan to send their children for deworming

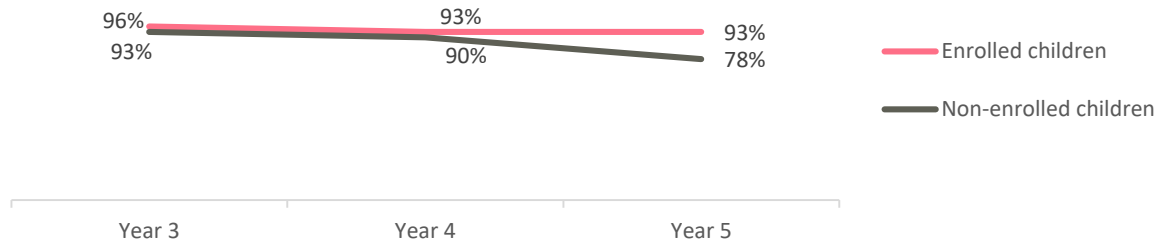
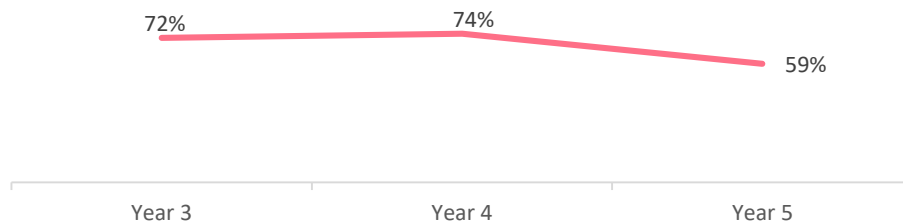
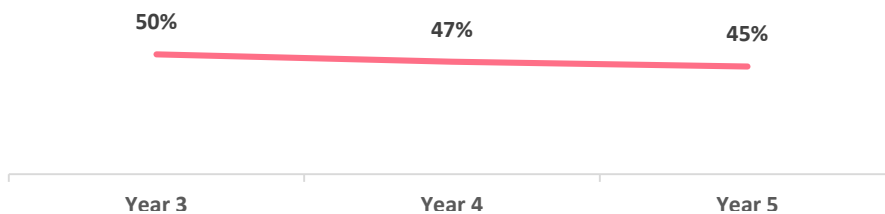


Figure 28. Parents who plan to accompany their children for deworming



The percentage of all parents aware of Deworming Day that had spoken to others in the community about deworming remained relatively stable year on year, with only slight decreases (**figure 29**).

Figure 29. Parents aware of Deworming Day who had spoken to others in the community about deworming³⁵

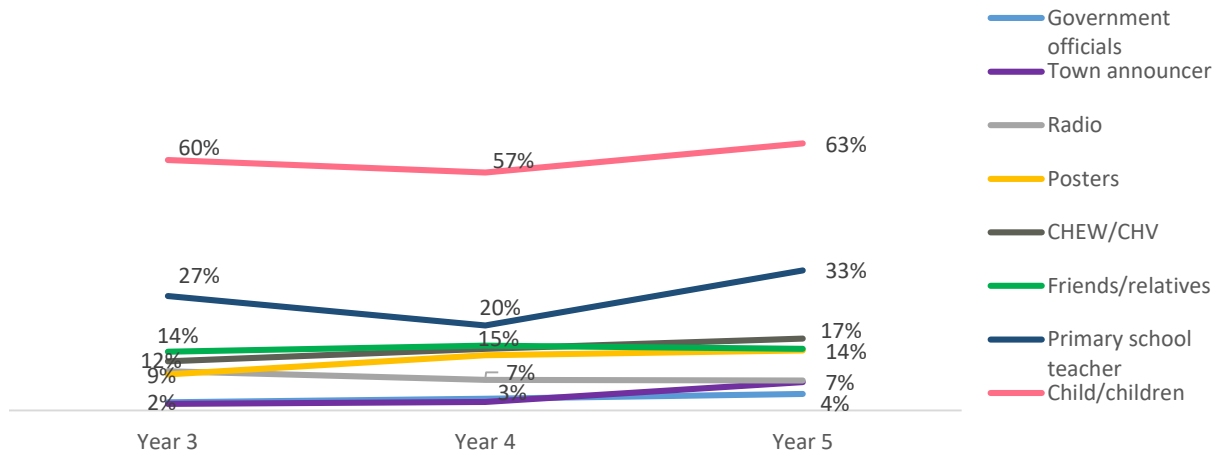


³⁵ N=Year 3: 716; Year 4: 781; Year 5: 600

Information sources on Deworming Day

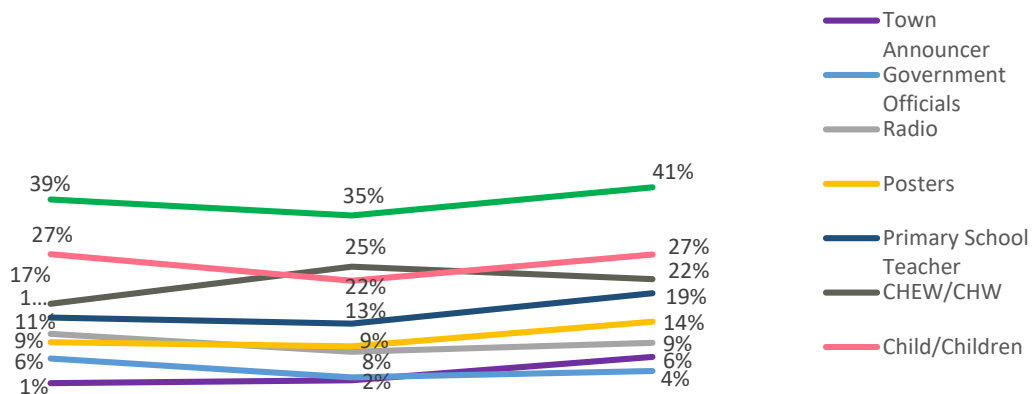
Between years 3 and 5 the main source of information on Deworming Day for parents of enrolled children was usually children or teachers. The percentage of parents accessing information from posters increased from 9% in year 3 to 14% in year 5.

Figure 30. The main information sources of parents of enrolled children³⁶



Parents of non-enrolled children got information from a broader base, with the majority hearing from friends or a relative, followed by a child, the CHEW or CHV, or a school teacher (**figure 31**). Despite a radio campaign being broadcast in local communities prior to Deworming Day, only 7% of parents of enrolled children and 9% of parents of non-enrolled children cited radio as a source of information in year 5.

Figure 31. Sources of information of parents of non-enrolled children³⁷



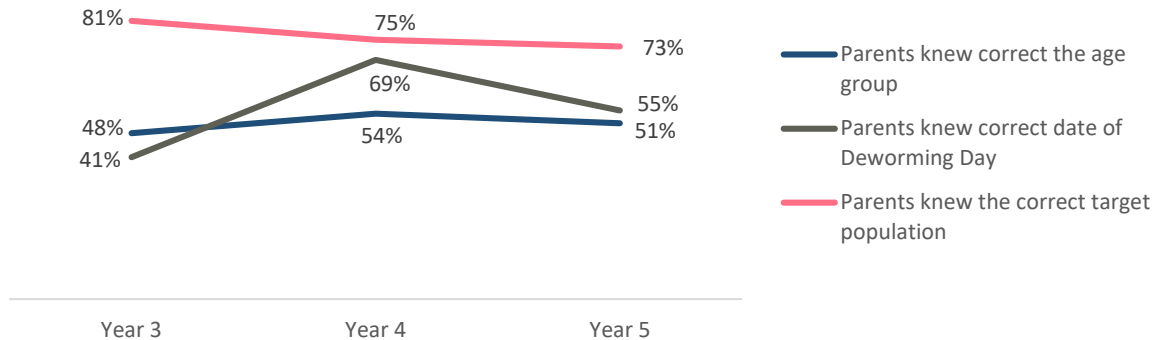
³⁶ N=Year 3:337; Year 4: 273; Year 5: 235

³⁷ N=Year 3:337; Year 4: 273; Year 5: 235

Information remembered by parents

Among parents who were aware of Deworming Day, there was an increase in the percentage of parents who knew the correct date and age range for treatment between years 3 and 5. There was a decrease in the percentage of parents who knew the correct target population for the campaign (**figure 32**).

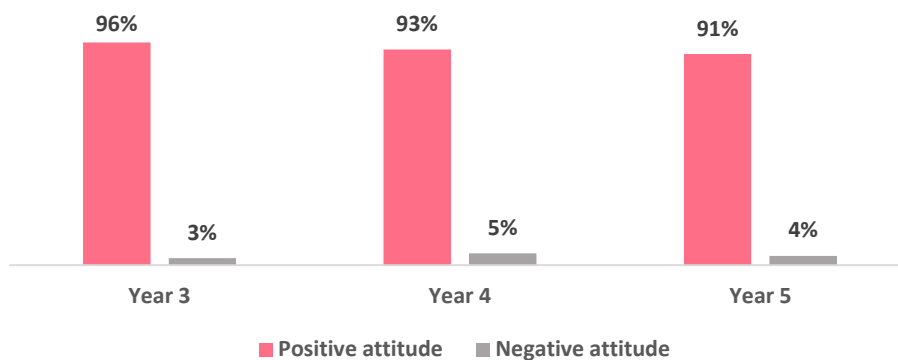
Figure 32. Parents interviewed who were aware of the key details of Deworming Day³⁸



Parents’ attitude towards deworming day

Positive attitudes towards deworming among parents of enrolled and non-enrolled children remained stable above 90% between years 3 and 5. Similarly, negative attitudes towards deworming remained below 5% between years 3 and 5 (**figure 33**).

Figure 33. Attitude of parents interviewed towards Deworming Day (enrolled and non-enrolled)³⁹



Conclusion

The percentage of parents of both enrolled and non-enrolled children who were aware of Deworming Day increased. Likewise, knowledge of the correct date and age for deworming increased. Proportions of parents spreading the message about deworming within their community remained stable, as did parents of enrolled children planning to send their children for deworming. In addition, the percentage of parents

³⁸ N=Year 3: 716; Year 4: 781; Year 5: 600

³⁹ N=Year 3: 716; Year 4: 781; Year 5: 600

with a positive attitude towards deworming remained stable. Fewer parents of non-enrolled children planned to send their children for deworming in year 5 compared to year 4, and fewer parents planned to accompany their children to deworming in year 5, which could potentially indicate greater familiarity or comfort with the program.

The majority of parents of enrolled children heard about deworming through either a child or teacher. Parents of non-enrolled children received information from a broader range of sources, but all parents were more likely to access information from other people compared to radios, posters, or other media. This highlights the value of word of mouth as a primary means of community sensitization for the NSBDP.

Coverage Validation

Year 3

In year 3, 92% of enrolled children interviewed across all counties during validation confirmed that they had been treated. This validated the reported coverage of 82% of enrolled SAC.

Year 4

In year 4, 93% of interviewed children could identify both the deworming pill administered by the program and the dosage of the tablets offered. This validated the reported coverage of 84% of enrolled SAC.

Year 5

In year 5, 94% of interviewed children could identify both the deworming pill administered by the program and the dosage of the tablets offered. This validated the reported coverage of 82% of enrolled SAC.

Conclusion

The school-based coverage validation survey indicates high coverage rates of 92, 93 and 94 percent for years 3, 4 and 5 respectively. Absenteeism on deworming day was cited as the main reason children did not take the deworming pill.

Conclusion

Monitoring data collected between years 2 and 5 of Kenya's NSBDP can offer several key learnings for program implementers:

Overall, the training cascade worked well, but there were some drops in the quality of the service delivered over time particularly between years 4 and 5: While the disbursement of training materials at sub-county remained stable between years 2 to 4, there was a drop in year 5. For teacher trainings, there was an increase in the distribution of materials from year 2 to 5 from 80 to 91%. Only the distribution of drugs in teacher trainings decreased in year 5 from 93 to 75%.

The extent to which different training topics were ‘completely’ covered in sub-county trainings and teacher trainings varied. In both sub-county and teacher trainings there was an overall decreasing trend around complete content coverage in year 5. This drop did not affect post-test scores for STH which remained stable for both sub-county and teacher trainings. However, post-test scores for schistosomiasis treatment did drop in year 5 among sub-county and teacher training participants.

In year 5, Evidence Action worked to align sub-counties as captured by the Ministry of Health (MoH) and Ministry of Education (MoE) units, which resulted in the inclusion of 13 new sub-counties in the program, each with new officers who were not experienced with the program model. Although there was not a change in the implementation strategy of the program, this influx of new implementing personnel could have created confusion in last mile-distribution of materials and may have compromised the quality of training passed on to teachers.

The majority of schools demonstrated preparedness for Deworming Day. The data shows that Deworming Day was completed systematically in most schools across all years: Between years 3 and 5 the majority of schools visited prior to Deworming Day had clear plans in place to manage the deworming exercise. Efforts to sensitize children on deworming remained high across years 3 to 5. This can be attributed to the stable and high percentage of teachers attending training sessions each year.

The percentage of schools observed to give the correct dosage of drugs, schools where Deworming Day took place systematically, and schools where teachers observed children swallowing the drugs was consistently high between years 3 and 5.

Word of mouth remains a key community sensitization tool for CHEWs and teachers: The data shows that across all three years, children and primary school teachers have been the main source of information on Deworming Day for parents of enrolled children. Parents of non-enrolled children also hear most information from other community members but usually from friends or relatives. Despite new initiatives such as radio, which was tested and rolled out from year 2, auditory and visual media were not as effective as word of mouth in spreading the message on deworming. This suggests that transmitting information through teachers, CHEWs and CHVs remains the best method for sensitizing the targeted populations.